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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/607,070	06/29/2000	Martin A. Yurjevich	1110-QA P98103US1A	7282

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EXAMINER

FISCHER, JUSTIN R

ART UNIT

PAPER NUMBER

1733

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/607,070

Applicant(s)

YURJEVICH ET AL.

Examiner

Justin R Fischer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7,9,11-22 and 24-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-16 is/are allowed.
- 6) ☒ Claim(s) 1-7,9,11,17-22 and 24-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 7, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Peda (EP 0881105). As best depicted in Figure 1, Peda discloses a runflat tire construction comprising a pair of axially spaced bead portions, each bead portion having a bead core 5, a pair of axially spaced sidewalls 8, and at least one carcass (body) ply 4, wherein each of said sidewalls contains a sidewall insert 9 (formed of a high modulus material) disposed axially inward of said at least one body ply (Column 5, Lines 1-3). In this instance, Peda describes the use of multiple carcass plies, wherein the sidewall insert or filler would be disposed between the carcass plies and thus the sidewall insert would be axially inward of an axially outermost carcass ply. Furthermore, Peda describes the cantilever portion (region that bridges the bead and the sidewall) of the tire as having a relatively flat angle between 0 and 20 degrees with respect to the tire axis of rotation (Column 1, Lines 1-10). It is suggested that applicant amend the claim to require that the sidewall inserts are disposed axially inward of each of said at least one body ply.

Regarding claim 7, Figure 1 depicts a bead filler 7 that extends into the cantilever portion of the sidewall.

With respect to claim 17, Peda suggests a multiple carcass design in which case the bead filler would be arranged between the first and second carcass plies, it being noted that the claim fails to distinguish if the filler is required to be between the main portions of respective carcass plies or simply between respective carcass plies.

***Claim Rejections - 35 USC § 102 / 103***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7, 9, 11, 17-20, 32, and 33 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Powell (US 4,193,437, newly cited). Powell teaches a runflat tire construction comprising a pair of axially spaced bead portions, each bead portion having a bead core 12, a pair of axially spaced sidewalls 19, and at least one carcass (body) ply 10, wherein each of said sidewalls contains a sidewall insert 30 (formed of a high modulus material) disposed axially inward of said at least one body ply (Column 3, Lines 32-45). Furthermore, as

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depicted in Figure 1, the sidewall portion is formed of a radial portion and a cantilever portion, wherein said cantilever portion is the transition region between the bead region and the radial portion of the sidewall. In this instance, the cantilever portion has an angle of approximately 20 degrees with respect to the tire axis of rotation, as measured along a reference line tangent to the carcass ply in the cantilever region (see attached copy of Figure 1 at end of office action), which falls well within the broad range of the claimed invention. While it is unclear if the drawings of Powell are working drawings, they can be used to obtain gross relative dimensions. It is further noted that while Powell fails to expressly describe the angle of the carcass ply (and thus the angle of the cantilever portion), one of ordinary skill in the art at the time of the invention would have found it obvious to form the cantilever portion with an angle between  $-30$  and  $+30$  degrees in view of the tire construction depicted by Powell. In particular, the carcass ply has a contour in the cantilever portion that mimics the contour of the radially innermost end of the crescent-shaped insert. As depicted in Figure 1, the crescent-shaped insert has a sharp contour that defines a small acute angle in reference to the tire axis of rotation. Thus, the carcass ply (that defines the cantilever portion) would similarly be expected to have a small acute angle in reference to the tire axis of rotation, it being emphasized that the relevant angle of the claimed invention can be as high as 30 degrees. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to arrange the cantilever portion of Powell at an angle between  $-30$  and 30 degrees with respect to the tire axis of rotation.

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As to claims 2, 3, and 18, it is evident from Figure 1 that the sidewall insert extends into the cantilever portion. In this instance, as mentioned above, the runflat insert is depicted as having a contour that follows that of the carcass plies defining the cantilever portion of the sidewall and as such, it is seen that the sidewall insert includes a cantilevered portion.

Regarding claim 4, Figure 1 of Powell clearly depicts the radially inner end of the sidewall insert as being disposed adjacent the outer end of the bead portion.

Regarding claim 7, although not expressly described by Powell, it is evident that a rubber portion exists between the main and turnup carcass portion. This rubber is well recognized as the bead filler and is evident that said bead filler is disposed in the cantilever region (region that bridges the bead to the radial sidewall portion). It is additionally noted that a bead filler represents a fundamental structural component of current tires and one of ordinary skill in the art at the time of the invention would have recognized the tire construction of Powell as containing this component.

With respect to claim 9, it is evident from Figure 1 that the radially outer end of the bead portion is adjacent the radially inner end of the sidewall insert.

Regarding claims 6, 11, and 20, Powell defines the insert as having a thickness that generally decreases away from the middle of said insert, thus defining a crescent-shaped insert (Column 3, Lines 20-30).

Regarding claims 17 and 19, Powell suggests the use of at least one body ply (Column 2, Lines 40-45). In this instance, the second carcass ply would be expected to have the same arrangement as the first carcass ply (e.g. be turned up around the bead

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core from the axially inside to the axially outside), such that the bead filler would be between the first and second body plies. It is additionally noted that it is unclear if the language intends to define the bead filler between the main portions of the first and second carcass ply as opposed to being broadly between the first and second carcass plies (e.g. second ply can be a down ply). In any event, each construction is well known in the manufacture of runflat tires.

Regarding claim 32, it is evident from Figure 1 of Powell that the axially outer end of the bead filler overlaps the radially inner end of the sidewall insert.

With respect to claim 33, the insert 30 is disposed axially inward of the body ply 10.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Powell or Peda as applied in claim 1 and Paragraph 2 above, respectively, and further in view of Spragg (US 5,769,980, of record). Powell and Peda disclose a runflat tire construction having a pair of axially-spaced bead portions, each having a bead core, a pair of axially-spaced sidewalls, at least one carcass ply, and a runflat insert in each of said sidewalls, wherein said sidewalls have a radial portion and

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a cantilever portion. Regarding Powell, Powell depicts a rubber layer that is disposed between the main carcass portion and the turnup carcass portion and extends radially outward from the bead core. This rubber layer is analogous to the bead filler of the claimed invention. While said rubber layer is not depicted as a separate and distinct component, bead fillers represent a well known and conventional tire component that defines the fundamental structure of nearly all tires and provides a desired degree of structure and reinforcement (rigidity) in the bead region of the tire. One of ordinary skill in the art at the time of the invention would have readily appreciated and expected the tire of Powell to include such a well known and conventional tire component.

Additionally, it is widely recognized in the tire industry that the bead filler and sidewall runflat insert can be formed of the same high modulus, low hysteresis rubber compound, as shown for example by Spragg (Column 5, Line 64-Column 6, Line 22), there being no conclusive showing of unexpected results to establish a criticality for the broad range of modulus, hardness, and hysteresis values. In particular, Spragg suggests that the use of a high modulus, low hysteresis compound in the bead filler provides improved runflat durability and inflated ride characteristics. Thus, one of ordinary skill in the art at the time of the invention would have found it obvious to form the bead filler and sidewall runflat insert of either one of Powell or Peda from the same rubber composition. It is further noted that Powell and Peda do recognize the use of a high modulus, low hysteresis compound for the runflat insert.



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8. Claims 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Powell or Peda as applied in claim 1 and Paragraph 2 above, respectively, and further in view of Powers (US 3,392,772, of record).

As previously set forth, Powell and Peda substantially teach the runflat tire construction of the claimed invention, including a cantilever portion disposed at an angle  $-30$  and  $+30$  degrees with respect to the tire axis of rotation that bridges the bead portion to the radial sidewall portion. The references, however, are silent with respect to the use of a stiffener ring in each of the sidewall cantilever portions. In any event, Powers suggests the use of stiffener rings in similar safety tires formed of cantilever portions, as best depicted in Figures 1-3, to resist lateral distortion of the sidewall (Column 2, Lines 53-57). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a pair of stiffener rings in each of the sidewall cantilever portions of Powell or Peda, as suggested by Powers, as further set forth below.

Regarding claim 24, the runflat tire of Powell and Peda clearly contain a sidewall insert and a sidewall cantilever portion, thereby forming a profile having a narrow rim and a closed bead assembly (beads are closer together). Powers teaches the use of stiffener rings in similar safety tires having similar cantilever portions to resist lateral distortion of the sidewalls. Thus, it is evident that the stiffener ring assembly described by Powers would be beneficial in an analogous manner when placed within the runflat tire of Powell or Peda.

With respect to claims 25-30, Powers describes a plurality of arrangements for said stiffener rings, including on the interior of the sidewalls and within the tire sidewalls. Furthermore, it is evident from Figures 1 and 2 that such a description is directed toward embodiments in which the stiffener ring is disposed inside the body cords and outside the body cords. Regarding claim 29, though the reference does not specifically describe the arrangement "outside the body plies", the reference does communicate the general use of stiffener rings in a variety of locations in the bead region and one of ordinary skill in the art at the time of the invention would have readily appreciated additional locations in the bead region not specifically outlined by Powers, such as "outside the body plies". With respect to claim 30, Figure 3 depicts a design in which at least two belt layers are used and the stiffener rings are disposed between body plies.

9. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Powell or Peda as applied in claim 1 and Paragraph 2 above, respectively, and further in view of Hirayama (JP 63141809, of record). Powell and Peda disclose a runflat tire construction in which the sidewall is formed of an upper "radial portion" and a lower "cantilever" portion, wherein said cantilever portion is disposed at an angle between -30 and +30 with respect to the tire axis of rotation. Though Powell and Peda are silent with respect to the use of a runflat band element, such a design is used in runflat tires as a complement to sidewall inserts in order to obtain optimum runflat characteristics. For example, Hirayama suggests that the combination of a runflat band element (reinforcing belt) and a pair of sidewall inserts provides the necessary compression strength and sidewall rigidity to affectively provide a tire with the ability to

run in an unpressurized condition. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to include both runflat reinforcing elements (band element and sidewall insert) in the runflat tire of Powell or Peda as suggested by Hirayama, for the benefits detailed above, there being no conclusive showing of unexpected results to establish a criticality for a runflat construction having both reinforcing elements.

#### ***Allowable Subject Matter***

10. Claims 12-16 are allowed. The following is an examiner's statement of reasons for allowance: the prior art references of record fails to suggest, disclose, or teach a runflat tire construction having a cantilever portion that bridges the bead portion and the radial sidewall portion, wherein each of said bead portions has a radially outer end that is disposed adjacent the radially outer end of the sidewall insert. In the prior art references noted above, the bead portions terminate at a position that is either adjacent the radially inner end of the sidewall insert (Powell) or at a position that is extremely distant and radially inward of the runflat insert (Peda).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### ***Response to Arguments***

11. Applicant's arguments with respect to claims 1, 7-17, 21, 22, and 24-33 have been considered but are moot in view of the new ground(s) of rejection (as required by

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the amendment presented in the Request for Continued Examination and in light of applicants arguments). Furthermore, in light of applicant's arguments, the 112, 1<sup>st</sup> Paragraph rejection regarding the term "uncollapsed" has been withdrawn.

**Conclusion**

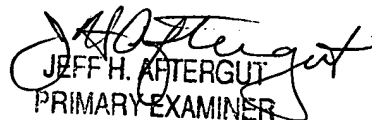
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397** (if after December 18, 2003, (571) 272-1215). The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (703) 308-3853. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Justin Fischer

November 7, 2003

  
JEFF H. AFTERGUT  
PRIMARY EXAMINER  
GROUP 1300

